

AMENDMENTS TO THE CLAIMS

1. (Original) A method for automatic dose control of one or more chemicals in a liquid treatment system, characterized in that the properties of liquid are used to modify the control surface of a linguistic equation (LE) controller adaptively by means of a predefined adaptation model to control the dosing of one or more chemicals to the liquid by one or more controllers.
2. (Original) The method of claim 1, characterized in that said linguistic equation is a dynamic linguistic equation.
3. (Original) The method of claim 1, characterized in that said linguistic equation is a static linguistic equation.
4. (Currently amended) The method of ~~any of the claims 1-3~~ claim 1, characterized in that said linguistic equation is a non-linear linguistic equation.
5. (Currently amended) The method of ~~any of the preceding claims~~ claim 1, characterized in that at least one of said controllers is a feedback controller.
6. (Currently amended) The method of ~~any of the preceding claims~~ claim 1, characterized in that at least one of said controllers is a feedforward controller.
7. (Currently amended) The method of ~~any of the preceding claims~~ claim 1, characterized in that

the controller setup comprises one of more cascade controllers.

8. (Currently amended) The method of ~~any of the preceding claims~~ claim 1, characterized in that said properties of the liquid are described by quality index.

9. (Original) The method of claim 8, characterized in that said quality index is purity index.

10. (Currently amended) The method of ~~any of the preceding claims~~ claim 1, characterized in that said liquid is water.

11. (Currently amended) The method of ~~any of the preceding claims~~ claim 1, characterized in that said liquid treatment system is a water purification system.

12. (Currently amended) The method of ~~any of the preceding claims~~ claim 1, characterized in that said chemicals are coagulants, flocculants, oxidants, reductants, adsorbents, dispersing agents, biocides or defoamers or combinations thereof.

13. (Currently amended) The method of ~~any of the preceding claims~~ claim 1, characterized in that said properties of liquid are defined from incoming liquid.

14. (Currently amended) The method of ~~any of the preceding claims~~ claim 1, characterized in that said properties of liquid are defined from outgoing liquid.

15. (Currently amended) The method of ~~any of the preceding claims~~ claim 1, characterized in that said adaptation is performed by LE-model.

16. (Currently amended) The method of ~~any of the claims 1-15~~ claim 1, characterized in that said adaptation is performed by fuzzy model.

17. (Currently amended) The method of ~~any of the preceding claims~~ claim 1, characterized in that said adaptation is based on remote operation.

18. (Original) A device arrangement for automatic dose control of chemicals in liquid treatment system, characterized in that it comprises one or more adaptation models and controllers, and the properties of liquid are arranged to modify the control surface of a linguistic equation (LE) controller adaptively by means of a predefined adaptation model, to control the dosing of chemicals to the liquid by one or more controllers.

19. (Original) The device arrangement of claim 18, characterized in that said linguistic equation is a dynamic linguistic equation.

20. (Original) The device arrangement of claim 18, characterized in that said linguistic equation is a static linguistic equation.

21. (Currently amended) The device arrangement of ~~any of the claims 18-20~~ claim 18, characterized in that said linguistic equation is a non-linear linguistic equation.

22. (Currently amended) The device arrangement of ~~any of the claims 18-21~~ claim 18, characterized in that at least one of said controllers is a feedback controller.

23. (Currently amended) The device arrangement of ~~any of the claims 18-22~~ claim 18, characterized in that at least one of said controllers is a feedforward controller.

24. (Currently amended) The device arrangement of ~~any of the claims 18-23~~ claim 18, characterized in that the controller setup comprises one of more cascade controllers.

25. (Currently amended) The device arrangement of ~~any of the claims 18-24~~ claim 18, characterized in that said properties of the liquid are described by quality index.

26. The device arrangement of claim 25, characterized in that said quality index is purity index.

27. (Currently amended) The device arrangement of ~~any of the claims 18-26~~ claim 18, characterized in that said liquid is water.

28. (Currently amended) The device arrangement of ~~any of the claims 18-27~~ claim 18, characterized in that said liquid treatment system is a water purification system.

29. (Currently amended) The device arrangement of ~~any of the claims 18-28~~ claim 18, characterized in that said chemicals are coagulants, flocculants, oxidants, reductants, adsorbents, dispersing agents, biocides or defoamers or combinations thereof.

30. (Currently amended) The device arrangement of ~~any of the claims 18-29~~ claim 18, characterized in that said properties of liquid are defined from incoming liquid.

31. (Currently amended) The device arrangement of ~~any of the claims 18-30~~ claim 18, characterized in that said properties of liquid are defined from outgoing liquid.

32. (Currently amended) The device arrangement of ~~any of the claims 18-31~~ claim 18, characterized in that said adaptation is arranged to be performed by LE-model.

33. (Currently amended) The device arrangement of ~~any of the claims 18-31~~ claim 18, characterized in that said adaptation is arranged to be performed by fuzzy model.

34. (Currently amended) The device arrangement of ~~any of the claims 18-33~~ claim 18, characterized in that said adaptation is based on remote operation.

35. (Currently amended) The device arrangement of ~~any of the claims 18-34~~ claim 18, characterized in that it further comprises an intelligent analyzer.